



SEQUENCE LISTING

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<120> MAMMALIAN CYTOKINES; RECEPTORS; RELATED REAGENTS AND METHODS

<130> DX01073K

<140> 09/775,046

<141> 2001-02-01

<150> 60/179,638

<151> 2000-02-02

<160> 15

<170> PatentIn version 3.1

<210> 1

<211> 1025

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (58) .. (522)

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Lys Val Leu Tyr Leu His Asn Asn Gln Leu Leu Ala Gly Gly Leu His	
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gca ggg aag gtc att aaa ggt gaa gag atc agc gtg gtc ccc aat cgg	201
Ala Gly Lys Val Ile Lys Gly Glu Glu Ile Ser Val Val Pro Asn Arg	
35 40 45	
tgg ctg gat gcc agc ctg tcc ccc gtc atc ctg ggt gtc cag ggt gga	249
Trp Leu Asp Ala Ser Leu Ser Pro Val Ile Leu Gly Val Gln Gly Gly	
50 55 60	
agc cag tgc ctg tca tgt ggg gtg ggg cag gag ccg act cta aca cta	297
Ser Gln Cys Leu Ser Cys Gly Val Gly Gln Glu Pro Thr Leu Thr Leu	
65 70 75 80	
gag cca gtg aac atc atg gag ctc tat ctt ggt gcc aag gaa tcc aag	345
Glu Pro Val Asn Ile Met Glu Leu Tyr Leu Gly Ala Lys Glu Ser Lys	
85 90 95	
agc ttc acc ttc tac cgg cgg gac atg ggg ctc acc tcc agc ttc gag	393
Ser Phe Thr Phe Tyr Arg Arg Asp Met Gly Leu Thr Ser Ser Phe Glu	

100	105	110	
tcg gct gcc tac ccg ggc tgg ttc ctg tgc acg gtg cct gaa gcc gat			441
Ser Ala Ala Tyr Pro Gly Trp Phe Leu Cys Thr Val Pro Glu Ala Asp			
115	120	125	
cag cct gtc aga ctc acc cag ctt ccc gag aat ggt ggc tgg aat gcc			489
Gln Pro Val Arg Leu Thr Gln Leu Pro Glu Asn Gly Gly Trp Asn Ala			
130	135	140	
ccc atc aca gac ttc tac ttc cag cag tgt gac tagggcaacg tgccccccag			542
Pro Ile Thr Asp Phe Tyr Phe Gln Gln Cys Asp			
145	150	155	
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tcactctctc tgctctcagg acccccacgt ctgacttagt gggcacctga ccactttgtc			662
ttctggttcc cagtttgat aaattctgag atttgagct cagtccacgg tcctccccca			722
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gggtcagtag ctctccacat gaagtctgt cactcaccac tgtgcaggaa gggaaggtgg			962
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act			1025

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Lys Val Leu Tyr Leu His Asn Asn Gln Leu Leu Ala Gly Gly Leu His
20 25 30

Ala Gly Lys Val Ile Lys Gly Glu Glu Ile Ser Val Val Pro Asn Arg
35 40 45

Trp Leu Asp Ala Ser Leu Ser Pro Val Ile Leu Gly Val Gln Gly Gly
50 55 60

Ser Gln Cys Leu Ser Cys Gly Val Gly Gln Glu Pro Thr Leu Thr Leu
65 70 75 80

Glu Pro Val Asn Ile Met Glu Leu Tyr Leu Gly Ala Lys Glu Ser Lys

85

90

95

Ser Phe Thr Phe Tyr Arg Arg Asp Met Gly Leu Thr Ser Ser Phe Glu
 100 105 110

Ser Ala Ala Tyr Pro Gly Trp Phe Leu Cys Thr Val Pro Glu Ala Asp
 115 120 125

Gln Pro Val Arg Leu Thr Gln Leu Pro Glu Asn Gly Gly Trp Asn Ala
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Pro Ile Thr Asp Phe Tyr Phe Gln Gln Cys Asp
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 <222> (67) .. (573)
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 Met Arg Gly Thr Pro Gly Asp Ala Asp Gly Gly Gly Arg Ala
 1 5 10
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 Val Tyr Gln Ser Met Cys Lys Pro Ile Thr Gly Thr Ile Asn Asp Leu
 15 20 25 30
 aat cag caa gtg tgg acc ctt cag ggt cag aac ctt gtg gca gtt cca 204
 Asn Gln Gln Val Trp Thr Leu Gln Gly Gln Asn Leu Val Ala Val Pro
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 cga agt gac agt gtg acc cca gtc act gtt gct gtt atc aca tgc aag 252
 Arg Ser Asp Ser Val Thr Pro Val Thr Val Ala Val Ile Thr Cys Lys
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 Tyr Pro Glu Ala Leu Glu Gln Gly Arg Gly Asp Pro Ile Tyr Leu Gly
 65 70 75
 atc cag aat cca gaa atg tgt ttg tat tgt gag aag gtt gga gaa cag 348
 Ile Gln Asn Pro Glu Met Cys Leu Tyr Cys Glu Lys Val Gly Glu Gln
 80 85 90
 ccc aca ttg cag cta aaa gag cag aag atc atg gat ctg tat ggc caa 396
 Pro Thr Leu Gln Leu Lys Glu Gln Lys Ile Met Asp Leu Tyr Gly Gln
 95 100 105 110

ccc gag ccc gtg aaa ccc ttc ctt ttc tac cgt gcc aag act ggt agg 444
 Pro Glu Pro Val Lys Pro Phe Leu Phe Tyr Arg Ala Lys Thr Gly Arg
 115 120 125

acc tcc acc ctt gag tct gtg gcc ttc ccg gac tgg ttc att gcc tcc 492
 Thr Ser Thr Leu Glu Ser Val Ala Phe Pro Asp Trp Phe Ile Ala Ser
 130 135 140

tcc aag aga gac cag ccc atc att ctg act tca gaa ctt ggg aag tca 540
 Ser Lys Arg Asp Gln Pro Ile Ile Leu Thr Ser Glu Leu Gly Lys Ser
 145 150 155

tac aac act gcc ttt gaa tta aat ata aat gac tgaactcagc ctagagggtg 593
 Tyr Asn Thr Ala Phe Glu Leu Asn Ile Asn Asp
 160 165

cagcttggtc tttgtcttaa agtttctggt tcccaatgtg ttttcgtcta cattttctta 653

gtgtcatttt cacgctggtg ctgagacagg ggcaaggctg ctgttatcat ctcattttat 713

aatgaagaag aagcaattac ttcataagcaa ctgaagaaca ggatgtggcc tcagaagcag 773

gagagctggg tggataaagg ctgtcctctc aagctggtgc tgtgtaggcc acaaggcatc 833

tgcatgagt actttaagac tcaaagacca aacactgagc tttcttctag ggggtgggtat 893

gaagatgctt cagagctcat gcgcgttacc cacgatggca tgactagcac agagctgatc 953

tctgtttctg ttttgcttta ttccctcttg ggatgatatc atccagtctt tatatgttgc 1013

caatatacct cattgtgtgt aatagaacct tcttagcatt aagaccttgt aaacaaaaat 1073

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<213> Homo sapiens

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Gln Ser Met Cys Lys Pro Ile Thr Gly Thr Ile Asn Asp Leu Asn Gln
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Gln Val Trp Thr Leu Gln Gly Gln Asn Leu Val Ala Val Pro Arg Ser
 35 40 45

Asp Ser Val Thr Pro Val Thr Val Ala Val Ile Thr Cys Lys Tyr Pro
 50 55 60

Glu Ala Leu Glu Gln Gly Arg Gly Asp Pro Ile Tyr Leu Gly Ile Gln
 65 70 75 80

Asn Pro Glu Met Cys Leu Tyr Cys Glu Lys Val Gly Glu Gln Pro Thr

85

90

95

Leu Gln Leu Lys Glu Gln Lys Ile Met Asp Leu Tyr Gly Gln Pro Glu
 100 105 110

Pro Val Lys Pro Phe Leu Phe Tyr Arg Ala Lys Thr Gly Arg Thr Ser
 115 120 125

Thr Leu Glu Ser Val Ala Phe Pro Asp Trp Phe Ile Ala Ser Ser Lys
 130 135 140

Arg Asp Gln Pro Ile Ile Leu Thr Ser Glu Leu Gly Lys Ser Tyr Asn
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Thr Ala Phe Glu Leu Asn Ile Asn Asp
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<210> 5

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Ser Ile Ile Arg Ala Asn Asp Gln Tyr Leu Thr Ala Ala Ala Leu His
 20 25 30

Asn Leu Asp Glu Ala Val Lys Phe Asp Met Gly Ala Tyr Lys Ser Ser
 35 40 45

Lys Asp Asp Ala Lys Ile Thr Val Ile Leu Arg Ile Ser Lys Thr Gln
 50 55 60

Leu Tyr Val Thr Ala Gln Asp Glu Asp Gln Pro Val Leu Leu Lys Glu
 65 70 75 80

Met Pro Glu Ile Pro Lys Thr Ile Thr Gly Ser Glu Thr Asn Leu Leu
 85 90 95

Phe Phe Trp Glu Thr His Gly Thr Lys Asn Tyr Phe Thr Ser Val Ala
 100 105 110

His Pro Asn Leu Phe Ile Ala Thr Lys Gln Asp Tyr Trp Val Cys Leu
 115 120 125

Ala Gly Gly Pro Pro Ser Ile Thr Asp Phe Gln Ile Leu Glu Asn Gln
130 135 140

Ala
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<210> 6
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Ala Pro Val Arg Ser Leu Asn Cys Thr Leu Arg Asp Ser Gln Gln Lys
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Ser Leu Val Met Ser Gly Pro Tyr Glu Leu Lys Ala Leu His Leu Gln
20 25 30

Gly Gln Asp Met Glu Gln Gln Val Val Phe Ser Met Ser Phe Val Gln
35 40 45

Gly Glu Glu Ser Asn Asp Lys Ile Pro Val Ala Leu Gly Leu Lys Glu
50 55 60

Lys Asn Leu Tyr Leu Ser Cys Val Leu Lys Asp Asp Lys Pro Thr Leu
65 70 75 80

Gln Leu Glu Ser Val Asp Pro Lys Asn Tyr Pro Lys Lys Lys Met Glu
85 90 95

Lys Arg Phe Val Phe Asn Lys Ile Glu Ile Asn Asn Lys Leu Glu Phe
100 105 110

Glu Ser Ala Gln Phe Pro Asn Trp Tyr Ile Ser Thr Ser Gln Ala Glu
115 120 125

Asn Met Pro Val Phe Leu Gly Gly Thr Lys Gly Gly Gln Asp Ile Thr
130 135 140

Asp Phe Thr Met Gln Phe Val Ser Ser
145 150

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<211> 147
<212> PRT
<213> Homo sapiens

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Thr Phe Tyr Leu Arg Asn Asn Gln Leu Val Ala Gly Tyr Leu Gln Gly
20 25 30

Pro Asn Val Asn Leu Glu Glu Lys Ile Asp Val Val Pro Ile Glu Pro
35 40 45

His Ala Leu Phe Leu Gly Ile His Gly Gly Lys Met Cys Leu Ser Cys
50 55 60

Val Lys Ser Gly Asp Glu Thr Arg Leu Gln Leu Glu Ala Val Asn Ile
65 70 75 80

Thr Asp Leu Ser Glu Asn Arg Lys Gln Asp Lys Arg Phe Ala Phe Ile
85 90 95

Arg Ser Asp Ser Gly Pro Thr Thr Ser Phe Glu Ser Ala Ala Cys Pro
100 105 110

Gly Trp Phe Leu Cys Thr Ala Met Glu Ala Asp Gln Pro Val Ser Leu
115 120 125

Thr Asn Met Pro Asp Glu Gly Val Met Val Thr Lys Phe Tyr Phe Gln
130 135 140

Glu Asp Glu
145

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<212> PRT

<213> Mus musculus

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Asn Phe Gly Arg Leu His Cys Thr Thr Ala Val Ile Arg Asn Ile Asn
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Asp Gln Val Leu Phe Val Asp Lys Arg Gln Pro Val Phe Glu Asp Met
20 25 30

Thr Asp Ile Asp Gln Ser Ala Ser Glu Pro Gln Thr Arg Leu Ile Ile
35 40 45

Tyr Met Tyr Lys Asp Ser Glu Val Arg Gly Leu Ala Val Thr Leu Ser
 50 55 60

Val Lys Asp Ser Lys Met Ser Thr Leu Ser Cys Lys Asn Lys Ile Ile
 65 70 75 80

Ser Phe Glu Glu Met Asp Pro Pro Glu Asn Ile Asp Asp Ile Gln Ser
 85 90 95

Asp Leu Ile Phe Phe Gln Lys Arg Val Pro Gly His Asn Lys Met Glu
 100 105 110

Phe Glu Ser Ser Leu Tyr Glu Gly His Phe Leu Ala Cys Gln Lys Glu
 115 120 125

Asp Asp Ala Phe Lys Leu Ile Leu Lys Lys Lys Asp Glu Asn Gly Asp
 130 135 140

Lys Ser Val Met Phe Thr Leu Thr Asn Leu His Gln Ser
 145 150 155

<210> 9
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 <213> Homo sapiens

<400> 9

Tyr Phe Gly Lys Leu Glu Ser Lys Leu Ser Val Ile Arg Asn Leu Asn
 1 5 10 15

Asp Gln Val Leu Phe Ile Asp Gln Gly Asn Arg Pro Leu Phe Glu Asp
 20 25 30

Met Thr Asp Ser Asp Cys Arg Asp Asn Ala Pro Arg Thr Ile Phe Ile
 35 40 45

Ile Ser Met Tyr Lys Asp Ser Gln Pro Arg Gly Met Ala Val Thr Ile
 50 55 60

Ser Val Lys Cys Glu Lys Ile Ser Thr Leu Ser Cys Glu Asn Lys Ile
 65 70 75 80

Ile Ser Phe Lys Glu Met Asn Pro Pro Asp Asn Ile Lys Asp Thr Lys
 85 90 95

Ser Asp Ile Ile Phe Phe Gln Arg Ser Val Pro Gly His Asp Asn Lys
 100 105 110

Met Gln Phe Glu Ser Ser Ser Tyr Glu Gly Tyr Phe Leu Ala Cys Glu
115 120 125

Lys Glu Arg Asp Leu Phe Lys Leu Ile Leu Lys Lys Glu Asp Glu Leu
130 135 140

Gly Asp Arg Ser Ile Met Phe Thr Val Gln Asn Glu Asp
145 150 155

<210> 10
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<212> PRT
<213> Mus musculus

<400> 10

Glu Lys Glu Leu Arg Ala Ala Ser Pro Ser Leu Arg His Val Gln Asp
1 5 10 15

Leu Ser Ser Arg Val Trp Ile Leu Gln Asn Asn Ile Leu Thr Ala Val
20 25 30

Pro Arg Lys Glu Gln Thr Val Pro Val Thr Ile Thr Leu Leu Pro Cys
35 40 45

Gln Tyr Leu Asp Thr Leu Glu Thr Asn Arg Gly Asp Pro Thr Tyr Met
50 55 60

Gly Val Gln Arg Pro Met Ser Cys Leu Phe Cys Thr Lys Asp Gly Glu
65 70 75 80

Gln Pro Val Leu Gln Leu Gly Glu Gly Asn Ile Met Glu Met Tyr Asn
85 90 95

Lys Lys Glu Pro Val Lys Ala Ser Leu Phe Tyr His Lys Lys Ser Gly
100 105 110

Thr Thr Ser Thr Phe Glu Ser Ala Ala Phe Pro Gly Trp Phe Ile Ala
115 120 125

Val Cys Ser Lys Gly Ser Cys Pro Leu Ile Leu Thr Gln Glu Leu Gly
130 135 140

Glu Ile Phe Ile Thr Asp Phe Glu Met Ile Val Val His
145 150 155

<210> 11
 <211> 154
 <212> PRT
 <213> Mus musculus

<400> 11

Val Leu Ser Gly Ala Leu Cys Phe Arg Met Lys Asp Ser Ala Leu Lys
 1 5 10 15

Val Leu Tyr Leu His Asn Asn Gln Leu Leu Ala Gly Gly Leu His Ala
 20 25 30

Glu Lys Val Ile Lys Gly Glu Glu Ile Ser Val Val Pro Asn Arg Ala
 35 40 45

Leu Asp Ala Ser Leu Ser Pro Val Ile Leu Gly Val Gln Gly Gly Ser
 50 55 60

Gln Cys Leu Ser Cys Gly Thr Glu Lys Gly Pro Ile Leu Lys Leu Glu
 65 70 75 80

Pro Val Asn Ile Met Glu Leu Tyr Leu Gly Ala Lys Glu Ser Lys Ser
 85 90 95

Phe Thr Phe Tyr Arg Arg Asp Met Gly Leu Thr Ser Ser Phe Glu Ser
 100 105 110

Ala Ala Tyr Pro Gly Trp Phe Leu Cys Thr Ser Pro Glu Ala Asp Gln
 115 120 125

Pro Val Arg Leu Thr Gln Ile Pro Glu Asp Pro Ala Trp Asp Ala Pro
 130 135 140

Ile Thr Asp Phe Tyr Phe Gln Gln Cys Asp
 145 150

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 <212> DNA
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<220>
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 <222> (1)..(1686)
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gtc aca gca gat gga tgc aag gac att ttt atg aaa aat gag ata ctt				96
Val Thr Ala Asp Gly Cys Lys Asp Ile Phe Met Lys Asn Glu Ile Leu	20	25	30	
tca gca agc cag cct ttt gct ttt aat tgt aca ttc cct ccc ata aca				144
Ser Ala Ser Gln Pro Phe Ala Phe Asn Cys Thr Phe Pro Pro Ile Thr	35	40	45	
tct ggg gaa gtc agt gta aca tgg tat aaa aat tct agc aaa atc cca				192
Ser Gly Glu Val Ser Val Thr Trp Tyr Lys Asn Ser Ser Lys Ile Pro	50	55	60	
gtg tcc aaa atc ata cag tct aga att cac cag gac gag act tgg att				240
Val Ser Lys Ile Ile Gln Ser Arg Ile His Gln Asp Glu Thr Trp Ile	65	70	75	80
ttg ttt ctc ccc atg gaa tgg ggg gac tca gga gtc tac caa tgt gtt				288
Leu Phe Leu Pro Met Glu Trp Gly Asp Ser Gly Val Tyr Gln Cys Val	85	90	95	
ata aag ggt aga gac agc tgt cat aga ata cat gta aac cta act gtt				336
Ile Lys Gly Arg Asp Ser Cys His Arg Ile His Val Asn Leu Thr Val	100	105	110	
ttt gaa aaa cat tgg tgt gac act tcc ata ggt ggt tta cca aat tta				384
Phe Glu Lys His Trp Cys Asp Thr Ser Ile Gly Gly Leu Pro Asn Leu	115	120	125	
tca gat gag tac aag caa ata tta cat ctt gga aaa gat gat agt ctc				432
Ser Asp Glu Tyr Lys Gln Ile Leu His Leu Gly Lys Asp Asp Ser Leu	130	135	140	
aca tgt cat ctg cac ttc ccg aag agt tgt gtt ttg ggt cca ata aag				480
Thr Cys His Leu His Phe Pro Lys Ser Cys Val Leu Gly Pro Ile Lys	145	150	155	160
tgg tat aag gac tgt aac gag att aaa ggg gag cgg ttc act gtt ttg				528
Trp Tyr Lys Asp Cys Asn Glu Ile Lys Gly Glu Arg Phe Thr Val Leu	165	170	175	
gaa acc agg ctt ttg gtg agc aat gtc tcg gca gag gac aga ggg aac				576
Glu Thr Arg Leu Leu Val Ser Asn Val Ser Ala Glu Asp Arg Gly Asn	180	185	190	
tac gcg tgt caa gcc ata ctg aca cac tca ggg aag cag tac gag gtt				624
Tyr Ala Cys Gln Ala Ile Leu Thr His Ser Gly Lys Gln Tyr Glu Val	195	200	205	
tta aat ggc atc act gtg agc att aca gaa aga gct gga tat gga gga				672
Leu Asn Gly Ile Thr Val Ser Ile Thr Glu Arg Ala Gly Tyr Gly Gly	210	215	220	
agt gtc cct aaa atc att tat cca aaa aat cat tca att gaa gta cag				720
Ser Val Pro Lys Ile Ile Tyr Pro Lys Asn His Ser Ile Glu Val Gln	225	230	235	240
ctt ggt acc act ctg att gtg gac tgc aat gta aca gac acc aag gat				768
Leu Gly Thr Thr Leu Ile Val Asp Cys Asn Val Thr Asp Thr Lys Asp	245	250	255	

aat aca aat cta cga tgc tgg aga gtc aat aac act ttg gtg gat gat	816
Asn Thr Asn Leu Arg Cys Trp Arg Val Asn Asn Thr Leu Val Asp Asp	
260 265 270	
tac tat gat gaa tcc aaa cga atc aga gaa ggg gtg gaa acc cat gtc	864
Tyr Tyr Asp Glu Ser Lys Arg Ile Arg Glu Gly Val Glu Thr His Val	
275 280 285	
tct ttt cgg gaa cat aat ttg tac aca gta aac atc acc ttc ttg gaa	912
Ser Phe Arg Glu His Asn Leu Tyr Thr Val Asn Ile Thr Phe Leu Glu	
290 295 300	
gtg aaa atg gaa gat tat ggc ctt cct ttc atg tgc cac gct gga gtg	960
Val Lys Met Glu Asp Tyr Gly Leu Pro Phe Met Cys His Ala Gly Val	
305 310 315 320	
tcc aca gca tac att ata tta cag ctc cca gct ccg gat ttt cga gct	1008
Ser Thr Ala Tyr Ile Ile Leu Gln Leu Pro Ala Pro Asp Phe Arg Ala	
325 330 335	
tac ttg ata gga ggg ctt atc gcc ttg gtg gct gtg gct gtg tct gtt	1056
Tyr Leu Ile Gly Gly Leu Ile Ala Leu Val Ala Val Ala Val Ser Val	
340 345 350	
gtg tac ata tac aac att ttt aag atc gac att gtt ctt tgg tat cga	1104
Val Tyr Ile Tyr Asn Ile Phe Lys Ile Asp Ile Val Leu Trp Tyr Arg	
355 360 365	
agt gcc ttc cat tct aca gag acc ata gta gat ggg aag ctg tat gac	1152
Ser Ala Phe His Ser Thr Glu Thr Ile Val Asp Gly Lys Leu Tyr Asp	
370 375 380	
gcc tat gtc tta tac ccc aag ccc cac aag gaa agc cag agg cat gcc	1200
Ala Tyr Val Leu Tyr Pro Lys Pro His Lys Glu Ser Gln Arg His Ala	
385 390 395 400	
gtg gat gcc ctg gtg ttg aat atc ctg ccc gag gtg ttg gag aga caa	1248
Val Asp Ala Leu Val Leu Asn Ile Leu Pro Glu Val Leu Glu Arg Gln	
405 410 415	
tgt gga tat aag ttg ttt ata ttc ggc aga gat gaa ttc cct gga caa	1296
Cys Gly Tyr Lys Leu Phe Ile Phe Gly Arg Asp Glu Phe Pro Gly Gln	
420 425 430	
gcc gtg gcc aat gtc atc gat gaa aac gtt aag ctg tgc agg agg ctg	1344
Ala Val Ala Asn Val Ile Asp Glu Asn Val Lys Leu Cys Arg Arg Leu	
435 440 445	
att gtc att gtg gtc ccc gaa tcg ctg ggc ttt ggc ctg ttg aag aac	1392
Ile Val Ile Val Val Pro Glu Ser Leu Gly Phe Gly Leu Leu Lys Asn	
450 455 460	
ctg tca gaa gaa caa atc gcg gtc tac agt gcc ctg atc cag gac ggg	1440
Leu Ser Glu Glu Gln Ile Ala Val Tyr Ser Ala Leu Ile Gln Asp Gly	
465 470 475 480	
atg aag gtt att ctc att gag ctg gag aaa atc gag gac tac aca gtc	1488
Met Lys Val Ile Leu Ile Glu Leu Glu Lys Ile Glu Asp Tyr Thr Val	
485 490 495	

atg cca gag tca att cag tac atc aaa cag aag cat ggt gcc atc cgg	1536
Met Pro Glu Ser Ile Gln Tyr Ile Lys Gln Lys His Gly Ala Ile Arg	
500 505 510	
tgg cat ggg gac ttc acg gag cag tca cag tgt atg aag acc aag ttt	1584
Trp His Gly Asp Phe Thr Glu Gln Ser Gln Cys Met Lys Thr Lys Phe	
515 520 525	
tgg aag aca gtg aga tac cac atg ccg ccc aga agg tgt cgg ccg ttt	1632
Trp Lys Thr Val Arg Tyr His Met Pro Pro Arg Arg Cys Arg Pro Phe	
530 535 540	
ctc cgg tcc acg tgc cgc agc aca cac ctc tgt acc gca ccg cag gcc	1680
Leu Arg Ser Thr Cys Arg Ser Thr His Leu Cys Thr Ala Pro Gln Ala	
545 550 555 560	
cag aac tag	1689
Gln Asn	

<210> 13
 <211> 562
 <212> PRT
 <213> Homo sapiens

<400> 13

Met Trp Ser Leu Leu Leu Cys Gly Leu Ser Ile Ala Leu Pro Leu Ser	
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Val Thr Ala Asp Gly Cys Lys Asp Ile Phe Met Lys Asn Glu Ile Leu	
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Ser Ala Ser Gln Pro Phe Ala Phe Asn Cys Thr Phe Pro Pro Ile Thr	
35 40 45	
Ser Gly Glu Val Ser Val Thr Trp Tyr Lys Asn Ser Ser Lys Ile Pro	
50 55 60	
Val Ser Lys Ile Ile Gln Ser Arg Ile His Gln Asp Glu Thr Trp Ile	
65 70 75 80	
Leu Phe Leu Pro Met Glu Trp Gly Asp Ser Gly Val Tyr Gln Cys Val	
85 90 95	
Ile Lys Gly Arg Asp Ser Cys His Arg Ile His Val Asn Leu Thr Val	
100 105 110	
Phe Glu Lys His Trp Cys Asp Thr Ser Ile Gly Gly Leu Pro Asn Leu	
115 120 125	
Ser Asp Glu Tyr Lys Gln Ile Leu His Leu Gly Lys Asp Asp Ser Leu	

130	135	140
Thr Cys His Leu His Phe Pro Lys Ser Cys Val Leu Gly Pro Ile Lys 145 150 155 160		
Trp Tyr Lys Asp Cys Asn Glu Ile Lys Gly Glu Arg Phe Thr Val Leu 165 170 175		
Glu Thr Arg Leu Leu Val Ser Asn Val Ser Ala Glu Asp Arg Gly Asn 180 185 190		
Tyr Ala Cys Gln Ala Ile Leu Thr His Ser Gly Lys Gln Tyr Glu Val 195 200 205		
Leu Asn Gly Ile Thr Val Ser Ile Thr Glu Arg Ala Gly Tyr Gly Gly 210 215 220		
Ser Val Pro Lys Ile Ile Tyr Pro Lys Asn His Ser Ile Glu Val Gln 225 230 235 240		
Leu Gly Thr Thr Leu Ile Val Asp Cys Asn Val Thr Asp Thr Lys Asp 245 250 255		
Asn Thr Asn Leu Arg Cys Trp Arg Val Asn Asn Thr Leu Val Asp Asp 260 265 270		
Tyr Tyr Asp Glu Ser Lys Arg Ile Arg Glu Gly Val Glu Thr His Val 275 280 285		
Ser Phe Arg Glu His Asn Leu Tyr Thr Val Asn Ile Thr Phe Leu Glu 290 295 300		
Val Lys Met Glu Asp Tyr Gly Leu Pro Phe Met Cys His Ala Gly Val 305 310 315 320		
Ser Thr Ala Tyr Ile Ile Leu Gln Leu Pro Ala Pro Asp Phe Arg Ala 325 330 335		
Tyr Leu Ile Gly Gly Leu Ile Ala Leu Val Ala Val Ala Val Ser Val 340 345 350		
Val Tyr Ile Tyr Asn Ile Phe Lys Ile Asp Ile Val Leu Trp Tyr Arg 355 360 365		
Ser Ala Phe His Ser Thr Glu Thr Ile Val Asp Gly Lys Leu Tyr Asp 370 375 380		

Ala Tyr Val Leu Tyr Pro Lys Pro His Lys Glu Ser Gln Arg His Ala
385 390 395 400

Val Asp Ala Leu Val Leu Asn Ile Leu Pro Glu Val Leu Glu Arg Gln
405 410 415

Cys Gly Tyr Lys Leu Phe Ile Phe Gly Arg Asp Glu Phe Pro Gly Gln
420 425 430

Ala Val Ala Asn Val Ile Asp Glu Asn Val Lys Leu Cys Arg Arg Leu
435 440 445

Ile Val Ile Val Val Pro Glu Ser Leu Gly Phe Gly Leu Leu Lys Asn
450 455 460

Leu Ser Glu Glu Gln Ile Ala Val Tyr Ser Ala Leu Ile Gln Asp Gly
465 470 475 480

Met Lys Val Ile Leu Ile Glu Leu Glu Lys Ile Glu Asp Tyr Thr Val
485 490 495

Met Pro Glu Ser Ile Gln Tyr Ile Lys Gln Lys His Gly Ala Ile Arg
500 505 510

Trp His Gly Asp Phe Thr Glu Gln Ser Gln Cys Met Lys Thr Lys Phe
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Trp Lys Thr Val Arg Tyr His Met Pro Pro Arg Arg Cys Arg Pro Phe
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Gln Asn

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atg att tca gag ggc cag cct ttc ccc ttc aac tgc aca tac cct cca 144
Met Ile Ser Glu Gly Gln Pro Phe Pro Phe Asn Cys Thr Tyr Pro Pro
35 40 45

agc cca atc tcc atc aac aga cac gtt aga att cac cag gac cag tcc 240
Ser Pro Ile Ser Ile Asn Arg His Val Arg Ile His Gln Asp Gln Ser
65 70 75 80

tgt	gtt	ata	aag	gat	gcc	cac	agc	tgt	tac	cga	ata	gct	ata	aac	cta	336
Cys	Val	Ile	Lys	Asp	Ala	His	Ser	Cys	Tyr	Arg	Ile	Ala	Ile	Asn	Leu	
			100					105					110			

ata	aat	tcc	tca	gat	gag	tac	cag	caa	tgg	tta	ccc	ata	gga	aaa	tcg	432
Ile	Asn	Ser	Ser	Asp	Glu	Tyr	Gln	Gln	Trp	Leu	Pro	Ile	Gly	Lys	Ser	
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tca	ata	aag	tgg	tat	aag	ggt	tgt	gaa	gag	att	aaa	gtg	agc	aag	aag	528
Ser	Ile	Lys	Trp	Tyr	Lys	Gly	Cys	Glu	Glu	Ile	Lys	Val	Ser	Lys	Lys	
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gat agt ggg agc tat gca tgc tca gcc aga ctg aca cac ttg ggg aga 624
Asp Ser Gly Ser Tyr Ala Cys Ser Ala Arg Leu Thr His Leu Gly Arg
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tct	gga	gga	agg	atc	cct	aac	atc	acg	tat	cca	aaa	aac	aac	tcc	att	720
Ser	Gly	Gly	Arg	Ile	Pro	Asn	Ile	Thr	Tyr	Pro	Lys	Asn	Asn	Ser	Ile	
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gaa gtt caa ctt ggc tcc acc ctc att gtg gac tgc aat ata aca gac	768
Glu Val Gln Leu Gly Ser Thr Leu Ile Val Asp Cys Asn Ile Thr Asp	
245 250 255	
acg aag gag aat acg aac ctc aga tgc tgg cga gtt aac aac acc ctg	816
Thr Lys Glu Asn Thr Asn Leu Arg Cys Trp Arg Val Asn Asn Thr Leu	
260 265 270	
gtg gac gat tac tac aac gac ttc aaa cgc atc cag gaa gga atc gaa	864
Val Asp Asp Tyr Tyr Asn Asp Phe Lys Arg Ile Gln Glu Gly Ile Glu	
275 280 285	
acc aat ctg tct ctg agg aat cac att ctg tac aca gtg aac ata aca	912
Thr Asn Leu Ser Leu Arg Asn His Ile Leu Tyr Thr Val Asn Ile Thr	
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Phe Leu Glu Val Lys Met Glu Asp Tyr Gly His Pro Phe Thr Cys His	
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gct gcg gtg tcc gca gcc tac atc att ctg aaa cgc cca gct cca gac	1008
Ala Ala Val Ser Ala Ala Tyr Ile Ile Leu Lys Arg Pro Ala Pro Asp	
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Phe Arg Ala Tyr Leu Ile Gly Gly Leu Met Ala Phe Leu Leu Leu Ala	
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Val Ser Ile Leu Tyr Ile Tyr Asn Thr Phe Lys Val Asp Ile Val Leu	
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tgg tat agg agt acc ttc cac act gcc cag gct cca gat gac gag aag	1152
Trp Tyr Arg Ser Thr Phe His Thr Ala Gln Ala Pro Asp Asp Glu Lys	
370 375 380	
ctg tat gat gcc tat gtc tta tac ccc aag tac cca aga gaa agc cag	1200
Leu Tyr Asp Ala Tyr Val Leu Tyr Pro Lys Tyr Pro Arg Glu Ser Gln	
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ggc cat gat gtg gac aca ctg gtg ttg aag atc ttg ccc gag gtg ctg	1248
Gly His Asp Val Asp Thr Leu Val Leu Lys Ile Leu Pro Glu Val Leu	
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Glu Lys Gln Cys Gly Tyr Lys Leu Phe Ile Phe Gly Arg Asp Glu Phe	
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cct gga caa gct gtg gcc agc gtc att gat gaa aac att aag ctg tgt	1344
Pro Gly Gln Ala Val Ala Ser Val Ile Asp Glu Asn Ile Lys Leu Cys	
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Arg Arg Leu Met Val Leu Val Ala Pro Glu Thr Ser Ser Phe Ser Phe	
450 455 460	
ctg aag aac ttg act gaa gaa caa atc gct gtc tac aat gcc ctc gtc	1440
Leu Lys Asn Leu Thr Glu Glu Gln Ile Ala Val Tyr Asn Ala Leu Val	
465 470 475 480	
cag gac ggc atg aag gtc att ctg att gaa ctg gag aga gtc aag gac	1488

Gln	Asp	Gly	Met	Lys	Val	Ile	Leu	Ile	Glu	Leu	Glu	Arg	Val	Lys	Asp	
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Tyr	Ser	Thr	Met	Pro	Glu	Ser	Ile	Gln	Tyr	Ile	Arg	Gln	Lys	His	Gly	
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gcc	atc	cag	tgg	gat	ggg	gac	ttc	aca	gag	cag	gca	cag	tgc	gcc	aag	1584
Ala	Ile	Gln	Trp	Asp	Gly	Asp	Phe	Thr	Glu	Gln	Ala	Gln	Cys	Ala	Lys	
		515					520					525				
acg	aaa	ttc	tgg	aag	aaa	gtg	aga	tat	cat	atg	cca	ccc	agg	agg	tac	1632
Thr	Lys	Phe	Trp	Lys	Lys	Val	Arg	Tyr	His	Met	Pro	Pro	Arg	Arg	Tyr	
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ccg	gca	tct	ccc	ccc	gtc	cag	ctg	cta	gga	cac	aca	ccc	cgc	ata	cca	1680
Pro	Ala	Ser	Pro	Pro	Val	Gln	Leu	Leu	Gly	His	Thr	Pro	Arg	Ile	Pro	
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ggc	tag															1686
Gly																

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		20						25					30			
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		35					40					45				
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	50					55					60					
Ser	Pro	Ile	Ser	Ile	Asn	Arg	His	Val	Arg	Ile	His	Gln	Asp	Gln	Ser	
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Trp	Ile	Leu	Phe	Leu	Pro	Leu	Ala	Leu	Glu	Asp	Ser	Gly	Ile	Tyr	Gln	
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Cys	Val	Ile	Lys	Asp	Ala	His	Ser	Cys	Tyr	Arg	Ile	Ala	Ile	Asn	Leu	
		100						105					110			
Thr	Val	Phe	Arg	Lys	His	Trp	Cys	Asp	Ser	Ser	Asn	Glu	Glu	Ser	Ser	
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Ile Asn Ser Ser Asp Glu Tyr Gln Gln Trp Leu Pro Ile Gly Lys Ser
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Gly Ser Leu Thr Cys His Leu Tyr Phe Pro Glu Ser Cys Val Leu Asp
145 150 155 160

Ser Ile Lys Trp Tyr Lys Gly Cys Glu Glu Ile Lys Val Ser Lys Lys
165 170 175

Phe Cys Pro Thr Gly Thr Lys Leu Leu Val Asn Asn Ile Asp Val Glu
180 185 190

Asp Ser Gly Ser Tyr Ala Cys Ser Ala Arg Leu Thr His Leu Gly Arg
195 200 205

Ile Phe Thr Val Arg Asn Tyr Ile Ala Val Asn Thr Lys Glu Val Gly
210 215 220

Ser Gly Gly Arg Ile Pro Asn Ile Thr Tyr Pro Lys Asn Asn Ser Ile
225 230 235 240

Glu Val Gln Leu Gly Ser Thr Leu Ile Val Asp Cys Asn Ile Thr Asp
245 250 255

Thr Lys Glu Asn Thr Asn Leu Arg Cys Trp Arg Val Asn Asn Thr Leu
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Val Asp Asp Tyr Tyr Asn Asp Phe Lys Arg Ile Gln Glu Gly Ile Glu
275 280 285

Thr Asn Leu Ser Leu Arg Asn His Ile Leu Tyr Thr Val Asn Ile Thr
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Phe Leu Glu Val Lys Met Glu Asp Tyr Gly His Pro Phe Thr Cys His
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Ala Ala Val Ser Ala Ala Tyr Ile Ile Leu Lys Arg Pro Ala Pro Asp
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Phe Arg Ala Tyr Leu Ile Gly Gly Leu Met Ala Phe Leu Leu Leu Ala
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Val Ser Ile Leu Tyr Ile Tyr Asn Thr Phe Lys Val Asp Ile Val Leu
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Trp Tyr Arg Ser Thr Phe His Thr Ala Gln Ala Pro Asp Asp Glu Lys
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Leu Tyr Asp Ala Tyr Val Leu Tyr Pro Lys Tyr Pro Arg Glu Ser Gln
385 390 395 400

Gly His Asp Val Asp Thr Leu Val Leu Lys Ile Leu Pro Glu Val Leu
405 410 415

Glu Lys Gln Cys Gly Tyr Lys Leu Phe Ile Phe Gly Arg Asp Glu Phe
420 425 430

Pro Gly Gln Ala Val Ala Ser Val Ile Asp Glu Asn Ile Lys Leu Cys
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Arg Arg Leu Met Val Leu Val Ala Pro Glu Thr Ser Ser Phe Ser Phe
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Leu Lys Asn Leu Thr Glu Glu Gln Ile Ala Val Tyr Asn Ala Leu Val
465 470 475 480

Gln Asp Gly Met Lys Val Ile Leu Ile Glu Leu Glu Arg Val Lys Asp
485 490 495

Tyr Ser Thr Met Pro Glu Ser Ile Gln Tyr Ile Arg Gln Lys His Gly
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Ala Ile Gln Trp Asp Gly Asp Phe Thr Glu Gln Ala Gln Cys Ala Lys
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Thr Lys Phe Trp Lys Lys Val Arg Tyr His Met Pro Pro Arg Arg Tyr
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Pro Ala Ser Pro Pro Val Gln Leu Leu Gly His Thr Pro Arg Ile Pro
545 550 555 560

Gly